1. (Currently Amended) A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting electromagnetic signals comprising a noise signal and the desired signal;

compressing the detected electromagnetic signals to generate a compressed signal;

filtering the compressed signal to generate a filtered signal comprising substantially the desired signal; and

expanding the filtered signal to generate an expanded signal.

2. (Original) The method of Claim 1 wherein the desired signal is a known signal.

3. (Original) The method of Claim 1 wherein the desired signal is a signal on a metallic conductor.

4. (Currently Amended) The method of Claim 1 wherein the step of detecting electromagnetic signals is performed by a first antenna, and wherein the method further comprises:

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna for the step of compressing.

5. (Original) The method of Claim 1 further comprising the step of amplifying the compressed signal.

6. (Original) The method of Claim 1 further comprising the step of generating an audible sound indicative of the expanded signal.

7. (Currently Amended) The method of Claim 1 wherein the ~~filter is~~ filtering is performed by a first filter, and wherein the method further comprises controlling whether the compressed signal is directed through the first filter or through a second filter connected in parallel with the first filter and an expandor.

8. (Currently Amended) An apparatus for detecting a desired signal in electromagnetically noisy environments, the apparatus comprising:

an antenna configured to detect electromagnetic signals comprising a noise signal and the desired signal;

an electronic signal compressor electrically connected to the antenna and configured for compressing the electromagnetic signals to thereby generate a compressed signal;

a bandpass filter connected to the electronic signal compressor for receiving the compressed signal from the electronic signal compressor and configured for generating a filtered signal comprising substantially the desired signal; and

an electronic signal expandor connected to the bandpass filter and configured for expanding the filtered signal to generate an expanded signal.

9. (Original) The method of Claim 8 wherein the desired signal is a known signal.

10. (Original) The method of Claim 8 wherein the desired signal is a signal on a metallic conductor.

11. (Currently Amended) The apparatus of Claim 8 wherein the antenna is a first antenna, and the apparatus further comprises:

a second antenna configured for detecting electromagnetic signals comprising substantially the noise signal; and

an amplifier connected to the electronic signal compressor, first antenna, and second antenna, the amplifier being configured for inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna.

12. (Currently Amended) The apparatus of Claim 8 wherein the antenna is a first antenna, and the apparatus further comprises:

a second antenna configured for detecting electromagnetic signals comprising substantially the noise signal; and

a differential amplifier connected to the electronic signal compressor, first antenna, and second antenna, the amplifier being configured for inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna.

13. (Currently Amended) The apparatus of Claim 8 further comprising a gain controller configured for adjusting an amplitude of the compressed signal.

14. (Currently Amended) The apparatus of Claim 8 further comprising an amplifier and a speaker connected to the electronic signal expandor for generating an audible sound indicative of the expanded signal.

15. (Original) The apparatus of Claim 8 further comprising a tick generator connected to a speaker, the tick generator being configured for periodically generating a tick signal for output through the speaker to indicate that the apparatus is powered on and in a mode of operation.

16. (Currently Amended) The apparatus of Claim 8 wherein the bandpass filter is a first bandpass filter, and wherein the apparatus further comprises:

a second bandpass filter connected in parallel with the first bandpass filter and the electronic signal expandor; and

means for controlling whether the compressed signal is directed through the first bandpass filter or the second bandpass filter.

17. (Currently Amended) An apparatus for detecting a known signal in an electromagnetically noisy environment, the apparatus comprising:

a probe antenna configured to detect electromagnetic signals comprising a noise signal and the ~~tone~~ known signal;

a noise canceling antenna configured for detecting electromagnetic signals comprising substantially the noise signal;

an amplifier connected to the probe antenna and the noise canceling antenna, the amplifier being configured for inverting the noise signal detected by the noise canceling antenna, and outputting an amplified signal comprising the sum of the inverted noise signal and the known signal detected by the probe antenna;

an electronic signal compressor electrically connected to the amplifier for receiving the amplified signal, and configured for compressing the amplified signal to thereby generate a compressed signal;

a bandpass filter connected to the electronic signal compressor for receiving the compressed signal from the electronic signal compressor and for substantially filtering out the noise signal and outputting a filtered signal comprising substantially the known signal and insubstantially the noise signal;

an electronic signal expandor connected to the bandpass filter and configured for receiving the filtered signal and generating an expanded signal comprising

substantially the known signal ~~amplifying~~ amplified and attenuating substantially the noise signal of the filtered signal; and

a speaker connected to the electronic signal expandor for generating an audible sound indicative of the expanded signal.

18. (Currently Amended) The ~~method~~ apparatus of Claim 17 wherein the known signal is a known signal on a wire.

19. (Original) The apparatus of Claim 17 wherein the amplifier is a differential amplifier.

20. (Currently Amended) The apparatus of Claim 17 further comprising a gain controller interconnected between the electronic signal compressor and the bandpass filter and configured for adjusting ~~the~~ an amplitude of the compressed signal.

21. (Currently Amended) The apparatus of Claim 17 further comprising a tick generator connected to a speaker, the tick generator being configured for periodically generating a tick signal, and the speaker being configured for making the tick signal audible to indicate that the apparatus is powered on and operating in a mode of operation utilizing ~~an expander~~ the electronic signal expandor.

22. (Currently Amended) The apparatus of Claim 17 wherein the bandpass filter is a first bandpass filter, and wherein the apparatus further comprises:

a second bandpass filter connected in parallel with the first bandpass filter and the electronic signal expandor; and

means for controlling whether the compressed signal is directed through the first bandpass filter or the second bandpass filter.

23. (Original) A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting electromagnetic signals comprising a noise signal and the desired signal;

compressing the detected electromagnetic signals to generate a compressed signal;

filtering the compressed signal to generate a filtered signal comprising substantially the desired signal.

24. (Original) The method of Claim 23 wherein the desired signal is a known signal.

25. (Original) The method of Claim 23 wherein the desired signal is a signal on a metallic conductor.

26. (Currently Amended) The method of Claim 23 wherein the step of detecting electromagnetic signals is performed by a first antenna, and wherein the method further comprises:

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna for the step of compressing.

27. (Original) The method of Claim 23 wherein the ~~filter is~~ filtering is performed by a first filter, and wherein the method further comprises controlling whether the compressed signal is directed through the first filter or through a second filter connected in parallel with the first filter.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

compressing the summed signal to generate a compressed signal;

filtering the compressed signal to generate a filtered signal comprising substantially the desired signal; and

expanding the filtered signal.

35. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

filtering the summed signal to generate a filtered signal comprising substantially the desired signal; and

expanding the filtered signal.

36. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

compressing the summed signal to generate a compressed signal; and

filtering the compressed signal to generate a filtered signal comprising substantially the desired signal.

37. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

compressing the summed signal using digital signal processing (DSP) to generate a compressed signal;

filtering the compressed signal using DSP to generate a filtered signal comprising substantially the desired signal; and

expanding the filtered signal using DSP.

38. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

filtering the summed signal using digital signal processing (DSP) to generate a filtered signal comprising substantially the desired signal; and

expanding the filtered signal using DSP.

39. (Rewritten in independent form) ~~The method of Claim 33, further comprising:~~

A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting with a first antenna electromagnetic signals comprising a noise signal and the desired signal;

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna to generate a summed signal;

compressing the summed signal using digital signal processing (DSP) to generate a compressed signal; and

filtering the compressed signal using DSP to generate a filtered signal comprising substantially the desired signal.

40. (Cancelled)

41. (Cancelled)

42. (Currently Amended) A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting an electromagnetic analog signal comprising a noise signal and the desired signal;

converting the electromagnetic analog signal into a digital signal;

compressing the digital signal using digital signal processing (DSP) to generate a compressed signal;

filtering the compressed signal using DSP to generate a filtered signal comprising substantially the desired signal;

expanding the filtered signal using DSP to generate an expanded digital signal; and

converting the expanded digital signal ~~to an analog signal~~ into an analog form.

43. (Original) The method of Claim 42 wherein the desired signal is a known signal.

44. (Original) The method of Claim 42 wherein the desired signal is a signal on a metallic conductor.

45. (Currently Amended) The method of Claim 42 wherein the step of detecting the electromagnetic analog signal ~~signals~~ is performed by a first antenna, and wherein the method further comprises:

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna for the step of compressing.

46. (Original) The method of Claim 42 further comprising the step of amplifying the compressed signal.

47. (Currently Amended) The method of Claim 42 further comprising the step of generating an audible sound indicative of the expanded digital signal.

48. (Currently Amended) The method of Claim 42 wherein the ~~filter is~~ DSP includes a first filter, and wherein the method further comprises controlling whether the compressed signal is directed through the first filter or through a second filter connected in parallel with the first filter and an expandor.

49. (Currently Amended) A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting electromagnetic analog signals comprising a noise signal and the desired signal;

converting the electromagnetic analog signals into a digital signal;

compressing the digital signal using digital signal processing (DSP) to generate a compressed signal;

filtering the compressed signal using DSP to generate a filtered signal comprising substantially the desired signal.

50. (Original) The method of Claim 49 wherein the desired signal is a known signal.

51. (Original) The method of Claim 49 wherein the desired signal is a signal on a metallic conductor.

52. (Currently Amended) The method of Claim 49 wherein the step of detecting electromagnetic analog signals is performed by a first antenna, and wherein the method further comprises:

detecting with a second antenna electromagnetic analog signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna for the step of compressing.

53. (Currently Amended) The method of Claim 49 wherein the ~~filter is~~ DSP includes a first filter, and wherein the method further comprises controlling whether the compressed signal is directed through the first filter or through a second filter connected in parallel with the first filter.

54. (Currently Amended) A method for detecting a desired signal in an electromagnetically noisy environment, the method comprising:

detecting electromagnetic analog signals comprising

a noise signal and the desired signal;

converting the electromagnetic analog signals into a digital signal; filtering the digital signal using digital signal processing (DSP) to generate a filtered signal comprising

substantially the desired signal; and

expanding the filtered signal using DSP.

55. (Original) The method of Claim 54 wherein the desired signal is a known signal.

56. (Original) The method of Claim 54 wherein the desired signal is a signal on a metallic conductor.

57. (Currently Amended) The method of Claim 54 wherein the step of detecting electromagnetic analog signals is performed by a first antenna, and wherein the

method further comprises:

detecting with a second antenna electromagnetic signals comprising substantially the noise signal; and

inverting the noise signal detected by the second antenna, and summing the inverted noise signal to the desired signal detected by the first antenna for the step of filtering.

58. (Currently Amended) The method of Claim 54 wherein the ~~filter is~~ DSP includes a first filter, and wherein the method further comprises controlling whether the compressed signal is directed through the first filter or through a second filter connected in parallel with the first filter.